

# **Predicting Online Search Intention for Validating Product Halalness Status**

**Ida Giyanti and Erni Suparti**

Industrial Engineering Study Program

Universitas Setia Budi

Surakarta, Indonesia

idagiyanti@setiabudi.ac.id; erni.suparti@setiabudi.ac.id

**Wahyudi Sutopo**

Research Group of Industrial Engineering and Techno-economics

Department of Industrial Engineering

Universitas Sebelas Maret

wahyudisutopo@staff.uns.ac.id

## **Abstract**

The Assessment Institute for Foods, Drugs, and Cosmetics Indonesian Council of Ulama (LPPOM-MUI) has provided web-based information to help consumers to trace the validity of halal status on the product package. This research aims to examine and predict Muslim consumers' intention to use the online search service to seek information regarding the halalness status of products. A research framework is created based on the Technology Acceptance Model (TAM) and modified by adding one external variable, namely halal concern. Structural equation model (SEM) is applied to assess the model fit and to test the research hypotheses. The result of model fit assessment concluded that the proposed model is marginally acceptable. The estimated model, however, found support only for the role of perceived ease of use (PEU) in affecting perceived usefulness (PU). Other hypotheses got weakly support since the relationships were in the predicted direction but not statistically significant. A little less than half ( $R^2 = 0,486$ ) of the variability in the online search intention is explained. This research is the first attempt to analyze the online information search intention regarding halal product status using TAM. This study provides new information in the emerging context of validating product halalness status.

## **Keywords**

Halalness, Information Search Intention, Structural Equation Model (SEM), Technology Acceptance Model (TAM)

## **1. Introduction**

Halal becomes the greatest concern to Moslems when preparing and consumer products. Halal status of the products also becomes an important factor considered by consumers before deciding to purchase (Nooh, et al., 2007; Prabowo, et al., 2015). Consumers can get information about the halal status of the products from its package embedding halal logo and ingredients. Manufacturers use this halal logo as a marketing tool so that their consumers are assured that their products comply with the halal standard.

In Indonesia, to display an official halal logo on product packages, manufacturers must comply with halal certification standard established by the Assessment Institute for Foods, Drugs, and Cosmetics Indonesian Council of Ulama (LPPOM-MUI) for their products. Halal Certification is a process to get the halal certificate issued by LPPOM-MUI. In order to get the certificate, manufacturers must follow several steps to verify that materials, production process, and Halal Assurance System meet to the standard of LPPOM-MUI (LPPOM-MUI, 2008). Product passing the halal certification procedure will get the halal certificate stating the halal status of the product, halal certificate number, and the validity period of the halal status. The validity period of halal status is two years and two months before the status is expired, manufacturers must request re-certification process to extend the halal status of the products.

To be certified, authorities from LPPOM-MUI will conduct a detailed procedure and on-site observation to assure that production facility, production process, and materials used in the manufacturing process meet to the rule of LPPOM-MUI. For some manufacturers, this process of getting halal status may not easy. This condition may lead some manufacturers to imitate official halal logo to attract consumers. As a result, consumers may hesitate and confused whether the halal logo embedded on the product package is official or fake. And when it is official, they still doubtful whether the halal status period is valid or has expired.

In order to avoid those consumers uncertainties, LPPOM-MUI has provided web-based information regarding product halalness status that can be accessed freely by consumers. Consumers can search the halal status of the product by accessing [www.halalmui.org](http://www.halalmui.org) and then go to the “Halal Product Search” menu. The website provides three searching categories: by product name, by manufacturers name, and by halal certificate number. Consumers just fill the search field with keywords according to the category has been chosen before. The information displayed in the searching result including halal certificate number, producer/ manufacturer, validity period, and product name. By that way, consumers can get accurate information about the product and verify whether the halal status on the product package is authentic.

This research was conducted in order to examine and predict Muslim consumers’ intention to use LPPOM-MUI website to seek information regarding the halalness status of products. The basic model used to explain the behavioral intention of web-based information seeking is the Technology Acceptance Model (TAM). Previous researches concerning online information-seeking intention were done by Kim, *et al.* (2004), Moon (2004), Rasinger, *et al.* (2007), Ho, *et al.* (2012), and Chang, *et al.* (2009). Kim, *et al.* (2004) and Moon (2004) analyzed factors affecting consumers’ intention to use the internet as a tool for product information searching and online purchasing. Kim, *et al.* (2004) and Moon (2004) developed predictor variables of usage intention from several previous related research and tested the proposed hypotheses using the structural equation model (SEM). The research was done by Rasinger, *et al.* (2007) and Ho, *et al.* (2012) concerned with tourism information search. Rasinger, *et al.* (2007) used a linear regression method to test the proposed hypotheses while Ho, *et al.* (2012) focused on developing a conceptual framework of tourism information search using grounded theory. Whereas, Chang, *et al.* (2009) compared Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) to predict the users’ information-seeking intention regarding academic digital library services. The model comparison performed by Chang, *et al.* (2009) was based on model fit evaluation and resulting from that TPB became a better model to predict the intention of information-seeking in an academic digital library than TRA. Recent research focusing on consumers’ intention to use the tracing technology of product halalness status was conducted by Rahman, *et al.* (2016). Rahman, *et al.* (2016) used five perception variables, namely complexity, reliability, social influence, facilitating conditions and benefits as predictors of consumers’ willingness to use halal tagging technology in tracing halal status and used multiple regression for hypotheses testing. Therefore, according to the authors’ knowledge, this research is the first attempt to analyze the web-based information search intention regarding halal product status using TAM. This study contributes to and extends the application of TAM to newly emerging issues such as online search intention to validate product halalness status.

## **2. Research Model**

The proposed conceptual model as depicted in Fig. 1 is developed based on TAM. TAM, founded by Davis (1989), is one of the most influential models and has been used extensively in predicting usage intention and acceptance of information systems and technology (Chen, *et al.*, 2011). TAM uses two perception factors - perceived ease of use (PEU) and perceived usefulness (PU) - as predictors of intention to use (IU) of information system and technology. In the context of this research, the definition of the three variables of TAM is as follows. PEU is defined as the degree to which a person believes that operating online information search regarding product halalness status would be easy or free of effort. The definition of PU is the degree of individual believes that using online search service would be a valuable source of information for validating product halalness status. While IU is defined as the individual’s intention in using online information search regarding product halalness status. The relationships between the three variables of TAM are PU and PEU directly affect IU, and PEU positively influences PU.

In this research, as an extension to basic TAM, we introduce the antecedent halal concern (HAL) to differentiate the purpose of online search information between the context of product halalness status and others. HAL is defined as the degree of individual’s attitude or attention toward the halalness status of the products consumed (Jusmaliani & Nasution, 2009; Rahman, *et al.*, 2015; Rezai, *et al.*, 2009; Simanjuntak & Dewantara, 2014). The variable halal concern is adapted from Lada, *et al.* (2009) who found that attitude toward halal products was positively related to the intention of choosing halal products. We argue that when choosing halal products, consumers must be sure about the

product halalness status. They have to seek detail information about the product. Therefore, online information search would be useful for them and then they intend to use it in the future.

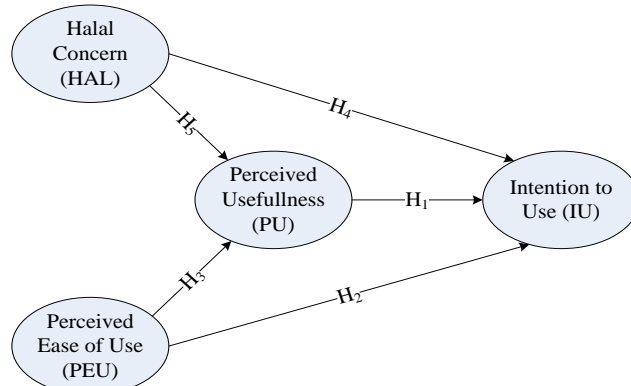


Figure 1. Proposed research model

Based on our explanation above, we proposed the following hypotheses:

- H<sub>1</sub>: PU significantly affect the IU in a positive direction
- H<sub>2</sub>: PEU significantly affect the IU in a positive direction
- H<sub>3</sub>: PEU significantly affect the PU in a positive direction
- H<sub>4</sub>: HAL significantly affect the IU in a positive direction
- H<sub>5</sub>: HAL significantly affect the PU in a positive direction

### 3. Methodology

#### 3.1 Study Procedure and Measures

Data for this research were gathered by primary data collection method through structured questionnaires. Questionnaires were distributed in several public places, like shopping centers, campus, and residential complex in Surakarta city. Before completing the questionnaire, respondents were asked whether they were familiar with the online search service intended to trace product halalness status. If respondents stated that they have not heard yet about the online search service or they have heard about it but they have not tried the online search service yet, the surveyor would explain and guide the respondents how to use the online search service. After receiving the instruction, respondents were asked to use the online search service and then complete a structured questionnaire containing measurement items of the online information-seeking intention about product halalness status. The measurement items contained 14 questions as presented in Table 1. All items intended to measure the variable in this study were derived from the previous research focusing on halal tracing technology and adapted into this study to measure the constructs. A five-point Likert scale ranging from “strongly disagree” to “strongly agree” was used to measure the items.

Table 1. Measurement items

Constructs	Measurement Item	Reference
Intention to Use (IU)	I prefer to use this online searching service every time I go out shopping of food and beverage products (IU1)	(Rahman, et al., 2016)
	I will use this online searching service to retrieve information of the product halalness (IU2)	(Rahman, et al., 2016)
	I will still use this online searching service in the next five years (IU3)	(Rahman, et al., 2016)
	I will use this online searching service whenever I feel hesitant about the halal status of a product (IU4)	(Rahman, et al., 2016)
	I will still use this online searching service even when the halal logo is already printed on the packaging of the product (IU5)	(Rahman, et al., 2016)
	This online searching service is beneficial to me as a consumer (PU1)	(Rahman, et al., 2016)

<b>Constructs</b>	<b>Measurement Item</b>	<b>Reference</b>
Perceived Usefulness (PU)	This online searching service provides sufficient information to consumers (PU2)	(Norman, <i>et al.</i> , 2009)
Perceived Ease of Use (PEU)	This online searching service is easy to use (PEU1)	(Rahman, <i>et al.</i> , 2016)
	Learning to use this online searching service is easy for me (PEU2)	(Rahman, <i>et al.</i> , 2016)
	Product halalness status can be validated through this online searching service using a few simple steps (PEU3)	(Norman, <i>et al.</i> , 2009)
Halal Concern (HAL)	I am very concerned about the halalness of food and beverage products I purchased (HAL1)	(Rezai, <i>et al.</i> , 2009)
	I always check the halal logo on the product package before I make a purchase decision (HAL2)	(Rezai, <i>et al.</i> , 2009)
	Religious obligation becomes my primary concern when purchasing food and beverage products (HAL3)	(Rezai, <i>et al.</i> , 2009)
	I do care about the food and beverage product halalness I consumed (HAL4)	(Rezai, <i>et al.</i> , 2009)

### 3.2 Sample

The sampling technique used in this research is purposive sampling. Respondents of this study must meet the following criteria: adult Moslem who had sufficient skill in using computer/ tablet/ smartphone for online information-seeking. A total of 200 respondents participated in this study. After performing data screening of missing value and outlier analysis, 13 of these respondents returned an incomplete response and/ or data given were outliers. Therefore, data of these 13 respondents were excluded, leaving 187 useful data to be analyzed. Table 2 gives the profile information of the respondents.

Table 2. Respondent profiles

<b>Variables</b>		<b>Frequency</b>	<b>Percentage</b>
Gender	<i>Male</i>	101	54.01%
	<i>Female</i>	86	45.99%
Age	<i>&lt; 21</i>	70	37.43%
	<i>21-30</i>	63	33.69%
	<i>31-40</i>	43	22.99%
	<i>41-50</i>	10	5.35%
	<i>&gt;50</i>	1	0.53%
Education	<i>Elementary</i>	2	1.07%
	<i>Junior high school</i>	14	7.49%
	<i>Senior high school</i>	103	55.08%
	<i>Diploma</i>	17	9.09%
	<i>Bachelor</i>	43	22.99%
	<i>Post Graduate</i>	8	4.28%
Familiarity with website	<i>Yes</i>	29	15.51%
	<i>No</i>	158	84.49%
Prior experience using website	<i>Yes</i>	12	6.42%
	<i>No</i>	175	93.58%

### **3.3 Analysis Technique**

The model was estimated with Covariance-Based Structural Equation Modelling (CBSEM) as done by Chang, *et al.* (2009) using AMOS 18.0. In this study, the model analysis was performed using a two-step approach as suggested by Anderson & Gerbing (1988) in which measurement models were examined first and then followed by a structural model. Confirmatory Factor Analysis (CFA) was performed in the measurement model to verify the factor structure of a set of indicators/ observed variables. The next step was using SEM to validate the hypothesized model of predicting Muslim consumers' information-search intention. The model estimation algorithm used in this study was the Maximum likelihood estimation (MLE) procedure. The minimum sample required to ensure the appropriate use of MLE is 100 to 150 (Hair, et al., 1998). The sample size in this study is 187, thus it would be sufficient to use MLE procedure in the model analysis.

Table 3. Summary of measurement model evaluation

<b>Factors</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Cronbach's Alpha</b>	<b>Standardized Factor Loading</b>	<b>Composite Reliability</b>
IU	3.025	0.446	0.762		0.779
IU1				0.764	
IU2				0.523	
IU3				0.766	
IU4				0.616	
IU5				0.530	
PU	3.289	0.486	0.601		0.623
PU1				0.548	
PU2				0.788	
PEU	3.099	0.390	0.630		0.609
PEU1				0.707	
PEU2				0.550	
PEU3				0.489	
HAL	3.409	0.451	0.688		0.703
HAL1				0.643	
HAL2				0.595	
HAL3				0.607	
HAL4				0.592	

## **4. Result and Discussion**

### **4.1 Measurement Model Evaluation**

Several indices were examined to assess the adequacy of the measurement models, including Cronbach's alpha, composite reliability, and standardized factor loadings. Cronbach's alpha is a measure of internal consistency of the construct indicator in which the lower limit of acceptable Cronbach's alpha value is 0.60 to 0.70 (Hair, et al., 1998). The result of Cronbach's alpha in this study for all construct is in the range of 0.601 to 0.762 (see Table 3). Therefore, it was confirmed that the internal consistency of measurement items was achieved. In addition to Cronbach's alpha, composite reliability was also applied to assess the reliability of the constructs. The recommended threshold of composite reliability should be equal to or greater than 0.60 (Hair, et al., 1998). The composite reliability value in this study which ranges from 0.609 to 0.779 (see Table 3) provides support for construct reliability. Standardized factor loading was used to evaluate convergent validity. Convergent validity assesses whether construct indicators have a high proportion of variance in common, and it is achieved when standardized factor loadings exceed 0.50 with statistical significance. Although there is one indicator which has an indicator loading below the recommended value, that is PEU3 with standardized factor loading equal to 0.489, all indicators in this study are statistically significant at

P-value<0.001. This statistical significance indicates that the measurement model exhibit adequate convergent validity.

#### **4.2 Structural Model Evaluation**

The cut-off for statistical significance in evaluating structural model was set at P-value<0.05. Firstly, the overall structural model fit was evaluated by examining chi-square ( $\chi^2$ ) statistics. A computed value of chi-square ( $\chi^2$ ) was 157.126 with 71 degrees of freedom (df) and P-value = 0.000. This P-value falls below the critical value for the 0.05 significance level. This statistic indicates weak support for believing that the discrepancy between the sample and fitted covariances matrices are non-significant. The use of chi-square as a fit statistic has many restrictions because the chi-square test assumes multivariate normality and sensitive to sample size (Hooper, et al., 2008). Therefore, the chi-square statistic was not adequate to judge the model goodness-of-fit. Due to the limitations of the chi-square, additional measures of fit were tested to assess model fit. Goodness-of-fit of the model was then evaluated using various goodness-of-fit indices as suggested by Hair, *et al.* (1998) and Hooper, *et al.* (2008). The indices including three types of measures: absolute fit measures, incremental fit measures, and parsimonious fit measures. Each measure was evaluated by different statistic fit index (see Table 4).

Table 4. Summary of the goodness of fit indices

<b>The goodness of Fit Measure</b>	<b>Index Value</b>	<b>Cut-Off Value</b>
<b>Absolute Fit Measures</b>		
Chi-square ( $\chi^2$ )	157.126	N/A
Degrees of freedom (df)	71	N/A
Significance level (P-value)	0.000	$\geq 0.05$
Goodness-of-fit index (GFI)	0.888	$\geq 0.90$
Root mean square residual (RMR)	0.025	$< 0.08$
Root mean square error of approximation (RMSEA)	0.081	0.05 – 0.08
<b>Incremental Fit Measures</b>		
Adjusted goodness-of-fit index (AGFI)	0.835	$\geq 0.90$
Comparative fit index (CFI)	0.880	$\geq 0.90$
Normed fit index (NFI)	0.806	$\geq 0.90$
Tucker-Lewis Index (TLI)	0.846	$\geq 0.90$
<b>Parsimonious Fit Measure</b>		
Normed chi-square ( $\chi^2/df$ )	2.213	1.00 – 2.00

Absolute fit measures evaluate the overall model fit. All of the absolute fit measures presented in Table 4 indicate that the model is marginally acceptable. Incremental fit measures assess the incremental fit between the proposed model and a null model, in which the null model is hypothesized as a single-factor model with no measurement error. All the incremental fit measures exceed 0.80. These values fall slightly below the threshold of 0.90 indicating further support of marginal acceptance of the proposed model. Finally, parsimonious fit measures assess the parsimony of the proposed model. Because there is one model proposed in this study, only one applicable measure for parsimonious fit measure, that is normed chi-square. The normed chi-square ( $\chi^2/df$ ) has a value of 2.213 (157.126/71). This value falls slightly above the recommended levels of 1.0 to 2.0. There is no consensus regarding an acceptable value for this statistic (Hooper, et al., 2008). Recommendation value of normed chi-square range from as low as 2.0 to as high as 5.0 (Hooper, et al., 2008). The normed chi-square value above the threshold of 2.0 indicating that the proposed model is not yet truly representative of the observed data and thus need improvement (Hair, et al., 1998). Thus, again, only marginal support was achieved for parsimonious fit. Based on a review of the three types of fit measures, it revealed a consistent pattern of marginal support, therefore the conclusion that the proposed model is marginally acceptable was considered appropriate.

### 4.3 Hypotheses Testing

Having assessed the measurement and structural model, resulting in the marginally fit of the models, the next step is to evaluate the hypotheses tests. Figure 2 presents the output from AMOS 18.0 displaying full structural model with the estimated standardized path coefficient. Whereas, Table 5 shows the summary results of the hypotheses testing. A result from hypotheses testing indicates that only H3 stating that perceived ease of use (PEU) significantly affect perceived usefulness (PU) in the positive direction, was strongly supported. Other hypotheses of H1, H2, H4, and H5 were weakly supported, as the relationships were in the predicted direction but not statistically significant. As a measure of the entire structural equation, an overall coefficient of the determinant ( $R^2$ ) is examined.  $R^2$  used in SEM is similar to that found in multiple regression. Halal concern (HAL) and perceived ease of use (PEU) accounted for 84.5% of the variance in perceived usefulness (PU). The same two antecedents, along with perceived usefulness (PU) explained 48.6% of the variance in online search intention.

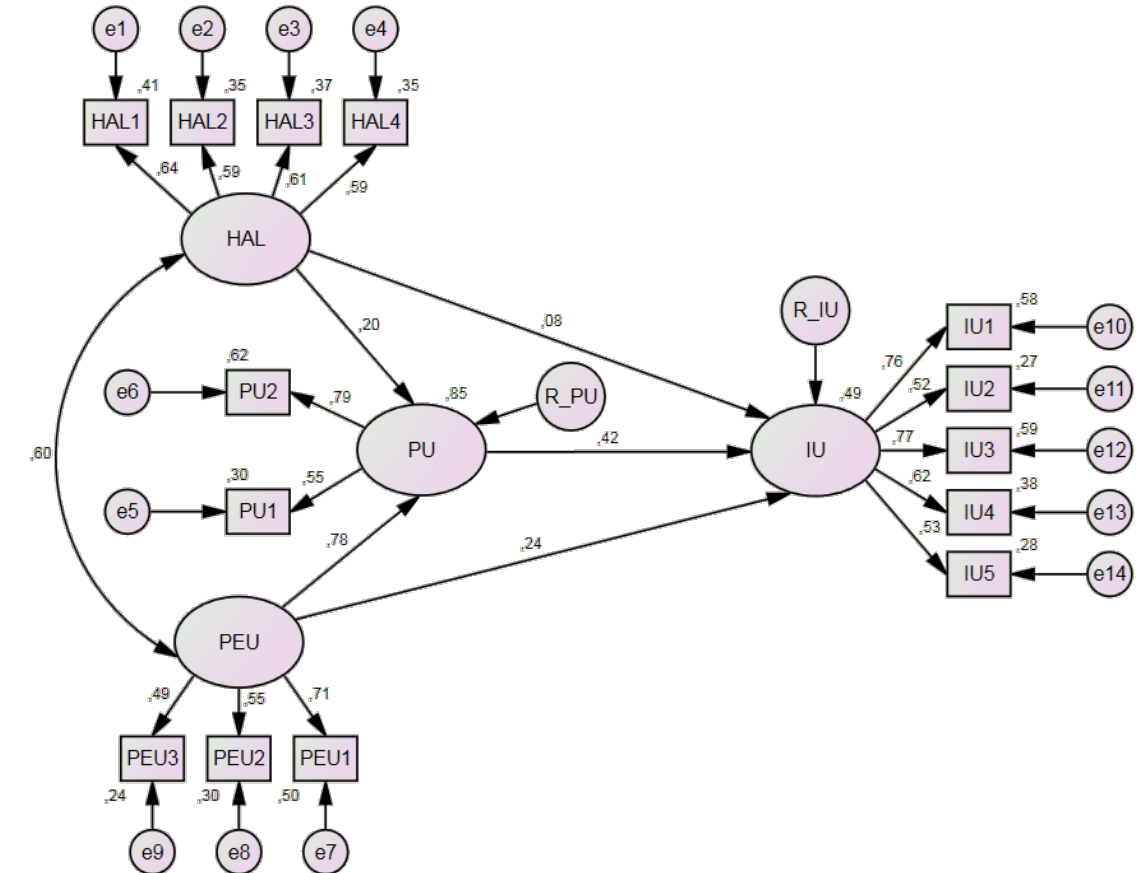


Figure 2. Path coefficient

Table 5. Summary of hypotheses testing

Hypothesized Path	Estimate	Standard Error	Critical Ratio	P value
H <sub>1</sub> : PU → IU	0.578	0.720	0.802	0.422
H <sub>2</sub> : PEU → IU	0.280	0.565	0.495	0.620
H <sub>3</sub> : PEU → PU	0.673	0.154	4.364	***
H <sub>4</sub> : HAL → IU	0.102	0.192	0.530	0.596
H <sub>5</sub> : HAL → PU	0.184	0.128	1.445	0.148

#### **4.4 Discussion**

This research is among the first applying TAM to explain the intention of Muslim consumers in using online search service to validate product halalness status. The conceptual model proposed in this research examined whether: 1) perceived usefulness and perceived ease of use affect intention to use ( $H_1$  and  $H_2$ ), 2) perceived ease of use affects perceived usefulness ( $H_3$ ), and 3) halal concern affects intention to use and perceived usefulness ( $H_4$  and  $H_5$ ). The estimated model, however, found support only for the role of perceived ease of use in affecting perceived usefulness ( $H_3$ ). This means that a consumer is more likely to believe the online search service is useful to his/her if it easy to use. This finding consistent with the original TAM and other previous research using TAM which confirms that perceived ease of use influences perceived usefulness.

Surprisingly, the hypotheses testing did not find a significant correlation between perceived usefulness and usage intention ( $H_1$ ), although the relationship between variables showed a positive direction. Similarly, the hypotheses of perceived ease of use influence the intention to use ( $H_2$ ) showed a positive direction but it was not statistically significant. These findings are in contrast with original TAM which confirms that perceived usefulness and perceived ease of use are significant antecedents for usage intention. These findings also contradicted with previous research conducted by Rahman, *et al.* (2016) who has proven that the benefits and complexity of halal tagging technology were significantly explaining consumers' willingness to use the technology. Benefits and complexity used by Rahman, *et al.* (2016) are respectively analog to variables of perceived usefulness and perceived ease of use employed in this research. In addition, this research also fails to validate  $H_4$  and  $H_5$  stating that halal concern influences intention to use and perceived usefulness respectively. Again, hypotheses testing result showed that the relationships between variables were in the positive direction but not statistically significant. Although halal concern was a significant predictor for choosing the halal product (Lada, *et al.*, 2009), this study fails to prove that halal concern also becomes a significant predictor for intention to use and perceived usefulness of online search service regarding product halalness status validation. Thus, the hypotheses of  $H_1$ ,  $H_2$ ,  $H_4$ , and  $H_5$  were not significant or weakly supported.

The weak support for  $H_1$ ,  $H_2$ ,  $H_4$ , and  $H_5$  can be explained as follows. According to the profile of respondents presented in Table 2, it is known that out of 187 respondents, only 29 people (15.51%) stated that they have been familiar about the online search service regarding product halalness status validation. Moreover, of the 29 people, only 12 people stated that they had used and felt the benefits of the service. It means that the online search service was not widely known and used by Muslim consumers. After the respondents were given a brief instruction of the service and asked to explore its features, respondents considered that the online search service has benefits to trace the halal status of the product and also to reduce doubts about the authenticity of the halal logo printed on the product packaging. Unfortunately, even though consumers feel the benefits of the service, but consumers did not have the intention to use the service yet in the future. Based on interviews with respondents, even though the online search service was very useful for Muslim consumers, they felt troubled if they would check the halal status of the product. Firstly, they must open the web, look for a halal product search menu, and then be able to explore the feature. This problem was likely to cause Muslim consumers to be reluctant to use this online search service. According to the finding of this result that place the importance of easy-to-use, it is expected that the government of Indonesia through LPPOM-MUI can provide similar services but easier to use ones, such as Android-based or RFID-based. Moreover, Indonesia becomes a country with the largest Muslim population in the world arising consequences for government to pay greater attention to the halal status of products in order to provide security guarantees to Muslim consumers.

Previously, LPPOM-MUI provided three services for validating product halalness status namely 1) short message service (SMS)-based service, 2) Android-based service which is called Halal MUI, and 3) web-based service. Currently, the first two services that have launched by LPPOM-MUI are unusable. Specifically for Halal MUI application which is Android-based, the features of this application are basically the same as the online search features provided by the [www.halalmui.org](http://www.halalmui.org). In fact, in the Halal MUI application, there were additional features of checking product halalness status through barcode scanning. Unfortunately, the barcode scan feature cannot work properly. The content inside the application was also not updated according to the development of the number of halal-certified products. In addition, if the user searched for product halal status and the product was not found, the application did not provide any response and only rose a blank screen. This made the users confused about the search result. Future research can be conducted to develop this Android based-application but more user-friendly ones and with more updated contents. Another application concerning product halalness status validation is an RFID-based application as developed by Nasir, *et al.* (2011). Norman, *et al.* (2009) in other research related to RFID concluded that RFID-enabled service in validating halal status was considered by the Malaysian user to be very useful and able to support Malaysia as a halal hub.



Another finding of this result is about coefficient of determinant that is the degree of independent variables in explaining dependent variable. It was found that the model accounted for substantial variability in perceived usefulness and usage intention of online search service regarding product halalness status. Variable of perceived usefulness can be explained by halal concern and perceived ease of use variables by 84.5%. But the variables of halal concern, perceived ease of use, and perceived usefulness together are only able to explain variable of intention to use by 48.6%. This research only extended one external variable, namely halal concern, into the original TAM. Subsequent research can expand the model by adding new variables affecting the user's intention to use online search services in validating product halalness status. Potential variables, like social influence (Rahman, et al., 2016), online service quality (Norman, et al., 2009), and innovativeness (Parasuraman, 2000), and their relationships need to be explored and integrated onto TAM in the future study. Another limitation of this research is about the small size of the sample. Future research is expected to use the larger sample size and broaden the geographical areas of the respondents in order to generalize the research results.

#### **4. Conclusion**

The objective of this research is to examine and predict Muslim consumers' intention to use LPPOM-MUI website to seek information regarding the halalness status of products based on TAM. TAM can be used as a framework for predicting Muslim consumers' intention to use online search service although based on a review of the three types of fit measures, the proposed model only got a marginally acceptable fit. The result of hypotheses testing shows that among five hypotheses proposed, only one hypothesis, stating that perceived ease of use affects perceived usefulness, got strongly support. While other hypotheses were weakly supported because the relationships were in the predicted direction but not statistically significant. Another finding of this result is about coefficient of determinant in which variable of halal concern together with variable of perceived ease of use could explain 84.5% of the variance in the perceived usefulness, whereas variables of halal concern, perceived ease of use, and perceived usefulness together are only able to explain variable of intention to use by 48.6%.

This research has theoretical and practical contributions. Theoretically, this research becomes the first attempt to analyze the intention to use online search service regarding halal product status using TAM and then extended the original TAM by adding one external variable, namely halal concern. This research also has developed measurements model regarding the intention to use online search service in validating product halalness status. This measurement model can be used in other similar research focusing on user intention to use halal tracing technology. This research finding increases the importance placed on "easy-to-use" of online search service being available to Muslim consumers. Therefore, it is expected that the government of Indonesia through LPPOM-MUI can provide similar services but easier to use ones in order to provide halalness guarantee toward Muslim consumers.

#### **References**

- Anderson, J. C. & Gerbing, D. W., Structural equation modeling in practice: a review and recommended two-step approach, *Psychological Bulletin*, vol. 103, no. 3, pp. 411-423, 1988.
- Chang, C. C., Lin, C. Y., Chen, Y. C. & Chin, Y. C., Predicting information-seeking intention in academic digital libraries, *The Electronic Library*, vol. 27, no. 3, pp. 448-460, 2009.
- Chen, S. C., Li, S. H. & Li, C. Y., Recent Related Research in Technology Acceptance Model: A Literature Review, *Australian Journal of Business and Management Research*, vol. 1, no. 9, pp. 124-127, 2011.
- Davis, F. D., Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly*, vol. 13, no. 3, pp. 319-340, 1989.
- Hair, J. F., Anderson, R. E., Tatham, R. L. & Black, W. C., *Multivariate Data Analysis*, 5th edition, Prentice Hall, New Jersey, 1998.
- Ho, C. I., Lin, M. H. & Chen, H. M., Web users' behavioral patterns of tourism information search: From online to offline, *Tourism Management*, vol. 33, pp. 1468-1482, 2012.
- Hooper, D., Coughlan, J. & Mullen, M., Structural Equation Modelling: Guidelines for Determining Model Fit, *Electronic Journal of Business Research Methods*, vol. 6, no. 1, pp. 53-60, 2008.
- Jusmaliani & Nasution, H., Religiosity Aspect in Consumer Behavior: Determinants of Halal Meat Consumption, *Asean Marketing Journal*, vol. 1, no. 2, pp. 1-12, 2009.
- Kim, J. I., Lee, H. C. & Kim, H. J., Factors Affecting Online Search Intention and Online Purchase Intention, *Seoul Journal of Business*, vol. 10, no. 2, pp. 27-48, 2004.

- Lada, S., Tanakinjal, G. H. & Amin, H., Predicting intention to choose halal products using the theory of reasoned action, *International Journal of Islamic and Middle Eastern Finance and Management*, vol. 2, no. 1, pp. 66-76, 2009.
- LPPOM-MUI, *General Guidelines of Halal Assurance System LPPOM MUI*, LPPOM MUI, Jakarta, 2008.
- Moon, B. J., Consumer adoption of the internet as an information search and product purchase channel: some research hypotheses, *International Journal Internet Marketing, and Advertising*, vol. 1, no. 1, pp. 104-118, 2004.
- Nasir, M., Norman, A., Fauzi, S. & Azmi, M., An RFID-Based Validation System for Halal Food, *The International Arab Journal of Information Technology*, vol. 8, no. 2, pp. 204-211, 2011.
- Nooh, M. N., Nawai, N., Dali, N. R. & Mohammad, H., Halal Certification: What the SME Producers Should Know, *Proceedings of the 1st Entrepreneurship & Management International Conference*, 2007.
- Norman, A., Md. Nasir, M., Mohd Fauzi, S. & Azmi, M., Consumer Acceptance of RFID-Enabled Services in Validating Halal Status, *Proceeding of the 9th International Symposium on Communications and Information Technology*, pp. 911-915, 2009.
- Parasuraman, A., Technology Readiness Index (TRI): A Multiple-Item Scale to Measure Readiness to Embrace to New Technologies, *Journal of Service Research*, vol. 2, no. 4, pp. 307-320, 2000.
- Prabowo, S., Rahman, A. A., Rahman, S. A. & Samah, A. A., Revealing Factors Hindering Halal Certification in East Kalimantan Indonesia, *Journal of Islamic Marketing*, vol. 6, no. 2, pp. 268-291, 2015.
- Rahman, A. A., Asrarhaghighi, E. & Ab Rahman, S., Consumers, and Halal Cosmetic Products: Knowledge, Religiosity, Attitude and Intention, *Journal of Islamic Marketing*, vol. 6, no. 1, pp. 148-163, 2015.
- Rahman, A., Hanafiah, M., Abdul, M. & Ruslee, A., Assessing Consumers' Willingness to Use Tagging Technology in Tracing Halal Status, *International Journal of Islamic Marketing, and Branding*, vol. 1, no. 3, pp. 272-284, 2016.
- Rasinger, J., Fuchs, M. & Hopken, W., Information Search with Mobile Tourist Guide: A Survey of Usage Intention, *Information Technology, and Tourism*, vol. 9, pp. 177-194, 2007.
- Rezai, G., Mohamed, Z. A., Shamsudin, M. N. & Chiew, F. C., Concerns for Halalness of Halal-Labelled Food Products Among Muslim Consumers in Malaysia: Evaluation of Selected Demographic Factors, *Economic and Technology Management Review*, vol. 4, pp. 65-73, 2009.
- Simanjuntak, M. & Dewantara, M. M., The Effects of Knowledge, Religiosity Value, and Attitude on Halal Label Reading Behavior of Undergraduate Students, *Asean Marketing Journal*, vol. 6, no. 2, pp. 65-76, 2014.

## **Biographies**

**Ida Giyanti** is a junior lecturer of Industrial Engineering Study Program at the Universitas Setia Budi, Indonesia. She earned Bachelor of Engineering degree in Industrial Engineering and Master of Engineering in Industrial Engineering and Management from Institut Teknologi Bandung, Indonesia. She has gained several research grants from Universitas Setia Budi and the Ministry of Research, Technology, and Higher Education of Indonesia. Her research results have been published in several conference papers as well as in accredited journals. Her research interest includes modeling and simulation.

**Erni Suparti** is the head of Industrial Engineering Study Program at the Universitas Setia Budi, Indonesia. She holds Bachelor of Engineering degree in Industrial Engineering from Universitas Sebelas Maret, Indonesia and Master of Engineering in Industrial Engineering and Management from Universitas Islam Indonesia. Her research interest is in ergonomic and work design. Her research on the design of gallon pouring system has gained intellectual recognition from the Ministry of Law and Human Rights of Indonesia with patent number P00201709107. She also active in the community empowerment regarding with the development of Small and Medium Enterprises (SME). She has obtained several grants on her research and community empowerment activities from the Ministry of Research, Technology, and Higher Education of Indonesia.

**Wahyudi Sutopo** is an associate professor in the Department of Industrial Engineering, Faculty of Engineering, and Universitas Sebelas Maret. He is a Professional Engineer registered with Institute of Engineers Indonesia (PII). He obtained his Doctorate in the field of Industrial Engineering and Management from Institut Teknologi Bandung (Indonesia), Master of Science in Management from Universitas Indonesia and Bachelor of Engineering in Industrial Engineering from Institut Teknologi Bandung. His research interests are Logistics & Supply Chain Management, Engineering Economy & Cost Analysis, and Technology Commercialization.